

REMARKS

This is in response to the Office Action mailed on June 20, 2007. Claims 1-22 were pending in the application, and the Examiner rejected all of the claims. With the present response, claims 1, 4, 6-9, 11, 14, and the specification are amended, claims 2, 5, and 10 are cancelled, claims 23-25 are new, and the remaining claims are unchanged. Consideration and allowance of all pending claims are respectfully solicited in light of the following comments.

Specification:

On page 2 of the Office Action, the Examiner objected to the specification because "element 303" on page 20, line 13 is missing from the drawings and is not referenced. The specification has been amended to remove the reference to "element 303." Applicant respectfully requests that the objection be withdrawn.

Claim 1:

Claim 1 has been amended to include the limitation previously presented in its dependent claim 5. On page 3 of the Office Action, the Examiner rejected both claims 1 and 5 under 35 U.S.C. §102 as being anticipated by Nassiff et al. U.S. Pat. No. 6,418,410 (hereinafter "Nassiff"). Applicant respectfully contends that amended claim 1 is patentable over Nassiff at least because the limitation previously presented in claim 5, and now included in claim 1, is not anticipated or obvious in light of the cited references.

On page 4 of the Office Action, the Examiner states that Nasseff column 7, lines 55-66 and column 6, lines 28-31 disclose the former claim 5 limitation of wherein the recognition engine is adapted to determine if a user's pronunciation caused an error, and selectively modify a probability associated with an existing pronunciation. Applicant respectfully contends that Nassiff does not disclose this.

First, it is clear that Nasseff does not explicitly disclose the limitation. There is nothing in Nasseff or the other references that recites the limitation. The Examiner concedes this by stating on page 4 of the Office Action that the cited sections of Nasseff simply imply the limitation.

Second, Nasseff cannot possibly imply the limitation because the cited sections of Nasseff and the reference as a whole explicitly teach away from the limitation. For example, Nasseff column 6, lines 28-32 states:

"As is known by those skilled in the art, it should be understood that the language model consists of statistical information about word patterns. Accordingly, correcting the language model is not an acoustic correction, but a statistical correction (emphasis added)."

The quoted passage, as well as the rest of the reference, teaches that the language model consists of statistical information about word patterns, and that the model accuracy can be improved by updating statistical information associated with word patterns. The claim 1 limitation recites modifying a probability associated with an existing pronunciation. Nasseff does not at all disclose probabilities associated with pronunciations. Nasseff teaches that the correct method to improve speech recognition is to associate statistical information with word patterns, not pronunciations.

Lastly, even if Nasseff did disclose probabilities associated with pronunciations, which it clearly does not, claim 1 recites an existing pronunciation and selectively modifying an existing pronunciation. The Examiner is suggesting that a person could first infer a probability associated with a pronunciation, then infer that there are existing pronunciations, and then infer that the inferred existing pronunciations and their inferred associated

probabilities are selectively modified. The suggested inference-upon-inference-upon-inference is unreasonable. Nasseff clearly does not disclose the claim 1 limitation. It would also not be obvious to modify Nasseff because the Nasseff language model teaches away from the limitation.

For at least the reasons listed above, applicant respectfully contends that amended claim 1 is not anticipated or obvious, and respectfully submits claim 1 for consideration and allowance.

Claim 2:

Claim 2 has been cancelled.

Claims 3-4:

Claims 3 and 4 are dependent upon independent claim 1. Claim 3 is unchanged, and claim 4 has been amended to be consistent with the claim 1 amendment. On page 5 of the Office Action, the Examiner rejected claim 3 under 35 U.S.C. §103, and on page 3 of the Office Action, the Examiner rejected claim 4 under 35 U.S.C. §102. Applicant respectfully contends that claims 3-4 are patentable based on their dependence upon the patentable independent claim 1. Consideration and allowance of claims 3-4 are respectfully solicited.

Claim 5:

Claim 5 has been cancelled. As discussed under the claim 1 argument, claim 1 has been amended to include the limitation previously recited in claim 5.

Claim 6:

On page 3 of the Office Action, the Examiner rejected claim 6 under 35 U.S.C. §112 because there was insufficient antecedent basis for "the user lexicon." Claim 6 has been amended to provide proper antecedent basis for "the user lexicon." Applicant respectfully requests that the 35 U.S.C. §112 rejection be withdrawn.

On page 5 of the Office Action, the Examiner rejected claim 6

under 35 U.S.C. §103. Applicant respectfully contends that claim 6 is patentable based upon its dependence upon the patentable independent claim 1. Consideration and allowance of claim 6 is respectfully solicited.

Claim 7:

Claim 7 has been amended to include the limitation previously presented in its dependent claim 10. On page 3 of the Office Action, the Examiner rejected claim 7 under 35 U.S.C. §102 as being anticipated by Nassiff, and on page 5 the Examiner also rejected claim 10 under 35 U.S.C. §102 as being anticipated by Nassiff. Applicant respectfully contends that amended claim 7 is patentable over Nassiff at least because the limitation previously presented in claim 10, and now included in claim 7, is not anticipated or obvious in light of the cited references.

On page 5 of the Office Action, the Examiner states that Nasseff column 6, lines 28-31 and column 7, lines 33-37 disclose the former claim 10 limitation of wherein inferring whether the change is a correction, or editing includes comparing a speech recognition engine score of the dictated text and of the changed text. Applicant respectfully contends that Nassiff does not disclose this.

The cited sections of Nasseff are irrelevant to the claim 7 limitation. Nasseff column 7, lines 33-37 discloses that the Nasseff language model will only be updated if the proposed change is a "close match" to the existing language model, and Nasseff column 6, lines 28-31 discloses that the Nasseff language model consists of statistical information about word patterns. The claim 10 limitation relates to inferring whether or not the change is a correction or an edit. It does not relate to when the language model is updated.

Applicant respectfully submits that the relevant section of Nasseff is column 5, lines 32-48. This section describes how

Nasseff infers whether or not a change is a correction or an edit. The section states:

"There are numerous situations in which the system will determine that a dictated word has been replaced by a replacement word. For example, if a new word is typed or otherwise inserted into a document, a determination is made as to whether the user has removed text immediately contiguous to the new word which has been inserted. If such removal has occurred, the system presumes that a misrecognition error has occurred and that the new word is a replacement word. Similarly, if the backspace key or the delete key has been used to remove characters immediately contiguous to new text, the system again concludes that a misrecognition error has occurred and that the new text is considered a replacement word. In contrast, if new text is inserted without overwriting dictated text, the system can conclude that the new text is simply being added and that no speech misrecognition error has occurred. In such a case, the new text is not characterized as a replacement word."

The above quoted section lists several ways of inferring whether or not a change is a correction or an edit, however it clearly does not disclose an inference that includes comparing a speech recognition engine score of the dictated text and of the changed text, such as is recited in claim 7.

Applicant has carefully reviewed Nasseff and the other references. Applicant does not believe that any of the references individually or in combination disclose or make obvious the limitation previously recited in claim 10 and now included in claim 7. Applicant respectfully submits claim 7 for consideration and allowance.

Claim 8:

Claim 8 is dependent upon independent claim 7 and has been amended to be consistent with the claim 7 amendment. On page 3 of the Office Action, the Examiner rejected claim 8 under 35 U.S.C. §102. Applicant respectfully contends that claim 8 is patentable

based on its dependence upon the patentable independent claim 7. Consideration and allowance of claim 8 is respectfully solicited.

Claim 9:

Claim 9 is dependent upon independent claim 7, and has been amended to be consistent with the claim 7 amendment. On page 8 of the Office Action, the Examiner rejected claim 9 under 35 U.S.C. §103 as being unpatentable over Nassiff in view of Gould European Patent Application document EP 0 773 532 A2 (hereinafter "Gould"). Applicant respectfully contends that claim 9 is not anticipated or obvious, and is patentable over Nassiff in view of Gould.

On page 8 of the Office Action, the Examiner states that Gould page 5, lines 56-59 and page 7, lines 13-19 disclose the claim 9 limitation of inferring whether the change is a correction further includes measuring the amount of time between dictation and the change. Applicant respectfully contends that Gould does not disclose this.

Gould page 5, lines 56-59 states:

"The long term editing feature provides the user with the flexibility to edit text that was just entered (correctly or incorrectly) into an open document or to open an old document and edit text entered at an earlier time. Referring to Fig. 5, the system first determines (step 130) whether the user has spoken, and if so, the system recognizes (step 132) the user's speech."

Gould page 7, lines 13-19 states:

"The short term error correction feature allows the user to correct speech recognition errors in a predetermined number (e.g., three) of the user's last utterances. The correction may simultaneously modify one or more words and correct misrecognized word boundaries as well as train the speech models for any misrecognized word or words. The system only modifies a previous utterance and trains speech models if the user's correction substantially matches speech frames corresponding to at

least a portion of the previous utterance. This substantially prevents misadaptation of speech models by preventing the user from replacing previously entered text with new words using the short term error correction feature."

The above quoted passages indicate that Gould tracks the amount of time that has passed since a word has been entered. It discloses that a user's options to modify the words can be customized in relation to the amount of time that has passed. However, the above quoted passages, as well as the rest of Nassiff, does not disclose the claim 9 limitation. The claim 9 limitation very, very generally speaking, makes an inference whether or not a change is a correction based at least partly upon the amount of time between the dictation and the change. Nassiff is not using the measured amount of time to make any sort of inference. It is only using the measured amount of time to determine what options will be available to a user to modify words.

For at least the reasons listed above, applicant respectfully contends that claim 9 is not anticipated or obvious, and respectfully submits claim 9 for consideration and allowance.

Claim 10:

Claim 10 has been cancelled. As discussed under the claim 7 argument, claim 7 has been amended to include the limitation previously recited in claim 10.

Claim 11-13:

Claim 11-13 are dependent upon independent claim 7. Claim 11 has been amended to be consistent with the claim 7 amendment. On page 5 of the Office Action, the Examiner rejected claim 11 under 35 U.S.C. §102, and rejected claims 12-13 under 35 U.S.C. §103. Applicant respectfully contends that claim 11-13 are patentable, at least based on their dependence upon the patentable independent

claim 7. Applicant respectfully submits claims 11-13 for consideration and allowance.

Claim 14:

On page 2 of the Office Action, the Examiner objected to claim 14 because the limitation "of the wave based" should be "of a wave based." The claim has been amended to include the correction, and Applicant respectfully requests withdrawal of the objection.

On page 8 of the Office Action, the Examiner rejected claim 14 under 35 U.S.C. §103. Applicant respectfully contends that claim 14 is patentable at least based on its dependence upon patentable independent claim 7. Applicant respectfully submits claim 14 for consideration and allowance.

Claims 15-19:

Claims 15-19 are dependent upon independent claim 7. Each of the claims were rejected on page 8 of the Office Action under 35 U.S.C. §103. Applicant respectfully contends that claim 15-19 are patentable at least based upon their dependence upon patentable independent claim 7. Applicant respectfully submits claims 15-19 for consideration and allowance.

Claim 20:

On page 8 of the Office Action, the Examiner rejected claim 20 under 35 U.S.C. §103 as being unpatentable over Nassiff in view of Hon et al. U.S. Patent No. 5,852,801 (hereinafter "Hon '801") and further in view of Hon et al. U.S. Patent No. 5,963,903 (hereinafter "Hon '903"). Applicant respectfully contends that claim 20 is patentable.

On page 10 of the Office Action, the Examiner states that Hon '903 column 7, lines 15-18 and 21-24 disclose the claim 20 limitation of wherein selectively learning the pronunciation further includes determining whether the new pronunciation has

occurred a pre-selected number of times. Applicant respectfully contends that Hon '903 does not disclose this.

Hon '903 column 7, lines 17-23 states:

"Factors that can be used in deriving the measure of phoneme model accuracy include: the number of times a phoneme is incorrectly recognized in the misrecognized word, the number of times a phoneme in the correct word is not recognized, and the difference in the probability values of the correct and incorrect phoneme models (emphasis added)".

As can be seen above, Hon '903 does disclose counting how many times a phoneme has been misrecognized. However, it is doing this to measure the accuracy of the model. It is not counting any phonemes or pronunciations as part of a method of selectively learning the pronunciation. No matter how many times a phoneme or pronunciation is misrecognized in Hon '903, the phoneme or pronunciation will not be learned. The reported model accuracy will just be decreased. Hon '903 clearly does not count misrecognized phonemes as part of selectively learning a phoneme or pronunciation such as is disclosed in claim 20.

For at least the reasons listed above, applicant respectfully contends that claim 20 is not anticipated or obvious, and respectfully submits claim 20 for consideration and allowance.

Claim 21:

On page 5 of the Office Action, the Examiner rejected claim 21 under 35 U.S.C. §103 as being unpatentable over Nassiff in view of Hon '801. Applicant respectfully contends that claim 21 is patentable.

On page 6 of the Office Action, the Examiner states that Hon '801 column 9, lines 36-40, column 7, lines 66-67, column 8, lines 1-3, and column 1, lines 33-36 and lines 54-56, disclose the claim 21 limitation of selectively learning from the nature of the

correction includes adding at least one word pair to the user's lexicon. Applicant respectfully contends that Hon '801 does not disclose the limitation at least because Hon '801 does not disclose a word pair or anything similar to a word pair.

Hon '801 column 9, lines 36-40 states:

"If the unrecognized word is not in the lexicon 177, then the present invention stores the new word, along with predetermined attributes that the user provides, and assigns the word an initial unigram (step 181). The processing then returns to node A 141."

Hon '801 column 7, lines 66-67 and column 8, lines 1-3 state:

"If the unrecognized word is in the active lexicon of the program 75, then the language module adaptation 113 of the present invention is implemented. If the unrecognized word is not in the active lexicon, then the Add-to-Lexicon module 117 of the present invention adds the word to the lexicon."

Hon '801 column 1, lines 33-36 states:

"However, some of these errors stem from the fact that the spoken words are not in an active lexicon of the recognition program."

Hon '801 column 1, lines 54-56 states:

"Thus, there is a need for a method to reduce recognition error and rapidly adapt to unrecognized words in a speech recognition system."

Applicant fails to see anything similar to a word pair in the above quoted passages or anywhere in any of the cited references. On page 7 of the Office Action, the Examiner seems to indicate that the Hon '801 examples of "steep" and "step" are a word pair. The Hon '801 "steep" and "step" are not a word pair. They are an example of a misrecognized word and the correct word. Word pairs, among other things, help to prevent misrecognized

pairs of words. An example of a word pair would be "too much" to prevent the word pair from being misrecognized as "two much."

Since the cited references fail to disclose a word pair, Applicant fails to see how any of they could disclose adding at least one word pair to the user's lexicon. Applicant respectfully contends that claim 21 is patentable, and respectfully submits claim 21 for consideration and allowance.

Claim 22:

On page 5 of the Office Action, the Examiner rejected claim 22 under 35 U.S.C. §103 as being unpatentable over Nassiff in view of Hon '801. Applicant respectfully contends that claim 22 is patentable.

Claim 22 recites the limitation of wherein at least one word pair is added to the user's lexicon temporarily. On page 7 of the Office Action, the Examiner indicates that Hon '801 column 7, lines 43-62 and column 9, lines 36-40 disclose something relevant to the limitation.

As discussed under the claim 21 argument, Applicant respectfully contends that none of the cited references discloses a word pair. Additionally, neither Hon '801 nor any of the other cited references disclose temporarily adding anything to a lexicon. Furthermore, the claim 22 limitation would not be obvious in light of any of the cited references considered independently or in combination. Page 21, lines 10-24 of the Applicant's specification identifies the problem resolved by word pairs and temporary word pairs (e.g. "wave too" instead of "wave two"). A person of ordinary skill in the art would have to first recognize the problem before they could identify a solution. None of the cited references identify or disclose the problem, so it would not be obvious to modify them to resolve the problem.

For at least the reasons listed above, Applicant respectfully contends that claim 22 is patentable, and respectfully submits claim 22 for consideration and allowance.

Claim 23:

Claim 23 is a new claim dependent on claim 22 that includes the limitation of wherein the length of time the word pair is added to the user's lexicon is based at least partially upon the most recent time the word pair is observed and the relative frequency that the pair has been observed in the past.

Claim 23 is well supported by the specification and drawings as originally filed, such as on page 21, lines 18-24 that states:

"Thus, if 'wave two' is misrecognized as 'wave too' and gets corrected by the user, the system automatically adds 'wave two' into the user lexicon temporarily. 'Temporarily' is somewhat dynamic based on the most recent time the word pair is observed, and the relative frequency that the pair has been observed in the past. Besides adding word pairs and/or phrases, the probability of the newly observed known pronunciation might also be increased if the system supports it."

As discussed under the claim 21 and claim 22 arguments, Applicant respectfully contends that the claim 23 limitation of a "word pair" is not disclosed or obvious by the cited references. Also, as discussed under the claim 22 argument, Applicant respectfully contends that the claim 23 limitation of a variable length of time stored in a lexicon is not disclosed or obvious by the cited references. Furthermore, claim 23 includes additional limitations not presented in claims 21 or 22 such as "based at least partially upon the most recent time the word pair is observed and the relative frequency that the pair has been observed in the past." Applicant respectfully contends that these limitations are not disclosed or obvious by the cited references.

For at least the reasons listed above, Applicant

respectfully contends that claim 23 is patentable, and respectfully submits claim 23 for consideration and allowance.

Claim 24:

Claim 24 is a new independent claim. Claim 24 is well supported throughout the specification and drawings as originally filed such as by the original claims 7 and 11, and by page 19, lines 16-28 of the specification that states in part, "A number of hints or indications can be used to inform the inference. For example, . . . if the user changes a significant number of words in the dictated sentences, the user is probably editing based upon a change of mind."

Applicant has carefully reviewed the cited references and respectfully contends that the claim 24 limitation of "inferring whether the change is a correction based at least partially upon the number of words changed" is not anticipated or obvious.

The claim 24 limitation stated above is similar to the original claim 11 limitation of "wherein inferring includes detecting the number of words changed." That limitation was rejected under 35 U.S.C. §102 as being anticipated by Nassiff column 5, lines 25-29 and lines 33-37. Applicant respectfully contends that Nassiff does not disclose the limitation.

Nassiff column 5, lines 27-29 states that "[i]t should be understood that the dictated word can be a plurality of dictated words and the replacement word can be a plurality of replacement words." Nassiff column 5, lines 33-37 then goes on to disclose several methods of inferring whether a correction has been made. The methods only reference "a dictated word" and "a replacement word." If read in context, it is clear that the methods disclosed in Nassiff do not distinguish between if one word is changed or if a plurality of words are changed. It treats both the same. This is different than the claim 24 limitation of "inferring whether the change is a correction based at least

partially upon the number of words changed" that very generally speaking, does distinguish between if one word is changed or if a plurality of words are changed.

For at least the reasons listed above, Applicant respectfully contends that claim 24 is patentable, and respectfully submits claim 24 for consideration and allowance.

Claim 25:

Claim 25 is a new claim dependent upon claim 24. Claim 24 recites the limitation of "if the change is inferred to be a correction, requesting a user confirmation." This is disclosed in the specification on page 19, lines 3-30 and more specifically on page 19, lines 28-30 that state that the system may ask for confirmation regarding whether a change is a correction.

Applicant has carefully reviewed the cited references and does not believe that the claim 25 limitation is anticipated or obvious by any of the references considered independently or in combination. Applicant respectfully contends that claim 25 is patentable, and respectfully submits claim 25 for consideration and allowance.

Conclusion:

It is respectfully submitted that claims 1, 7, 9, and 20-25 are patentably distinguishable from the cited references considered independently or in combination. It is also respectfully submitted that claims 3-4, 6, 8, and 11-19 are patentable based on their dependence upon patentable independent claims. Accordingly, consideration and allowance of all pending claims are respectfully solicited.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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